

CLAIM AMENDMENT SHEET

CLAIMS

What is claimed is:

1. (Currently Amended) A system method for treating a difficult to extinguish flammable liquid fire associated with a tank having a roof and a substantially enclosed space above liquid in the tank and below the roof, comprising:
 - establishing a foam/film blanket over at least 90% of a surface of the liquid within the tank; and
 - discharging dry powder into a space between the roof and said blanket.
2. (Original) The method of claim 1 wherein the discharging step is subsequent to establishing at least two-thirds of an NFPA regulated foam/film blanket.
3. (Original) The method of claim 1 wherein the discharging occurs during the last 10 minutes of an NFPA regulated time of application of foam.
4. (Currently Amended) An industrial scale tank with a roof having a difficult to extinguish substantially enclosed space above a flammable liquid in the tank and below the roof, comprising:
 - at least one opening communicating with the space;
 - means associated with the tank for creating a foam/film blanket on the liquid; and
 - means associated with the at least one opening for discharging dry chemical into the space.
5. (Currently Amended) A fixed foam/dry chemical system for an industrial size tank with a roof having a space above a difficult to extinguish flammable liquid in the tank and below the roof, comprising:
 - at least one foam conduit fixed to the tank, in valved fluid communication with an interior of the tank; and
 - at least one dry chemical conduit fixed to the tank, structured for attachment to a source of dry chemical and in valved fluid communication with the space under the roof of the tank and structured to discharge dry chemical into the space.
6. (Original) The apparatus of claim 5 including at least three said foam conduits spaced around the tank and at least three said dry chemical conduits spaced around the

tank and structured such that at least one foam chamber and one dry chemical conduit communicate with the interior of the tank through one opening in a tank wall.

7. (Original) The apparatus of claim 5 including a nozzle for discharge of dry chemical attached to the dry chemical conduit.

8. (Original) A system for extinguishing a fire of a difficult to extinguish fuel or flammable liquid in a storage tank fitted with at least a significant fixed top roof portion, comprising:

discharging foam into a cavity above the fuel/liquid and below the fixed top roof portion; and

after at least two-thirds of the way through a NFPA-recommended application rate/duration procedure guideline for the foam attack, discharging dry chemical into a cavity above the fuel/liquid and below the fixed roof portion.

9. (Original) The system of claim 8 that includes discharging dry chemical in the last ten minutes of the NFPA recommended application rate/duration procedure guideline.

10. (Original) The system of claim 8 that includes discharging dry chemical for 5 to 15 seconds.

11. (Original) The system of claim 8 that includes discharging dry chemical after at least 40 minutes of foam application.

12. (Original) The system of claim 8 that includes discharging dry chemical through at least one tank vent.

13. (Original) The system of claim 12 wherein the vent is an eyebrow vent.

14. (Original) The system of claim 12 wherein the vent is a tank roof vent.

15. (Original) The system of claim 8 that includes a floater on top of the fuel/liquid and the discharging of foam and of dry chemical is a discharging into a cavity defined between the floater and the fixed top roof portion.

16. (Original) The system of claim 8 wherein the fuel or flammable liquid comprises a blended fuel.

17. (Currently Amended) Apparatus for extinguishing a difficult to extinguish fuel or flammable liquid fire in a storage tank with a fixed roof portion and at least one vent

opening into a space defined above the fuel/liquid surface and a fixed roof portion, comprising;

a storage tank containing a difficult to extinguish fuel or flammable liquid and having a fixed roof portion defining a space or cavity above the fuel/liquid surface and below the fixed roof portion; and

a dry chemical supply pipe system rising along a portion of the tank wall having at least one end opening into a tank vent venting the space or cavity, the pipe system in fluid communication with a source of dry powder and structured to discharge dry chemical into the space.

18. (Original) The apparatus of claim 17 wherein the supply pipe system has multiple ends inserted into multiple tank vents.
19. (Original) The apparatus of claim 17 wherein the vent comprises a wall eyebrow vent.
20. (Original) The apparatus of claim 17 wherein the vent comprises a roof vent.
21. (Original) The apparatus of claim 17 wherein the supply pipe system is permanently affixed to the tank.
22. (Original) The apparatus of claim 17 wherein the supply pipe system is portable.
23. (Original) The apparatus of claim 17 that includes a floater, and wherein the space defined above the fuel/liquid surface is space defined above the floater.
24. (Original) The apparatus of claim 17 wherein the difficult to extinguish fuel or flammable liquid comprises a blended fuel.
25. (New) A fixed dry chemical system, comprising:
 - an industrial storage tank having a roof and at least one aperture;
 - a source of dry chemical located external to the tank;
 - piping/line in fluid communication with the source; and
 - a dry chemical discharge orifice in fluid communication with the piping/line, located interior of the tank and structured such that dry chemical passes from the source through the piping/line and through the tank aperture to the discharge orifice.
26. (New) The system of claim 25 wherein a discharge orifice includes a low flow dry chemical discharge tip.

27. (New) The system of claim 25 wherein the discharge orifice includes at least one high flow dry chemical discharge tip.
28. (New) The system of claim 27 wherein the high flow dry chemical discharge tip comprises a pair of tips discharging to the left and to the right of the tank aperture.
29. (New) The system of claim 26 wherein the low flow dry chemical discharge tip discharges approximately toward the middle of the interior of the tank.
30. (New) The system of claim 25 wherein the piping/line is attached to a fitting associated with the tank aperture.
31. (New) The system of claim 25 wherein the piping/line is integrated into a fixed foam system and the fixed foam system is structured to discharge foam through the tank aperture.
32. (New) A method for extinguishing fire in an industrial tank having a roof, comprising
- covering the surface of the liquid in the tank with a blanket of foam; and
 - subsequent to the establishment of a foam blanket on the liquid in the tank, discharging dry chemical through an aperture in at least one of the tank and the roof into space below the roof and above the foam blanket.
33. (New) The method of claim 32 wherein the discharging of the dry chemical utilizes a fixed dry chemical system.
34. (New) The method of claim 32 wherein the creating of the foam blanket utilizes a fixed foam system.
35. (New) The method of claim 33 wherein the creating of the foam blanket utilizes a fixed foam system.